

WHAT IS CLAIMED IS:

1. A method comprising:  
coupling a switch capacitor circuit to a control signal;  
determining that an output capacitance of the switch capacitor circuit is oscillating;  
5 uncoupling the switch capacitor circuit from the control signal to set a first output  
capacitance of the switch capacitor circuit; and  
coupling a main loop circuit to the control signal.
2. A method according to Claim 1, further comprising:  
10 receiving the control signal from a charge pump,  
wherein the control signal is based on a frequency of an oscillating signal output  
from an oscillating circuit and a reference frequency.
3. A method according to Claim 2, further comprising:  
15 receiving a reference signal representing the reference frequency;  
receiving a first signal having a first frequency, the first frequency based on the  
frequency of the oscillating signal;  
determining a difference between the reference frequency and the first frequency;  
and  
20 transmitting a signal to the charge pump based on the difference.
4. A method according to Claim 1, wherein a frequency of an oscillating signal  
output by an oscillating circuit is based at least on the first output capacitance, and wherein

the frequency of the oscillating signal is based at least on an output signal of the main loop circuit.

5. A method according to Claim 1, further comprising:

5        setting the main loop circuit to substantially a center of its tuning range before coupling the switch capacitor circuit to the control signal.

6. A method according to Claim 1, further comprising:

determining if the main loop circuit has reached a threshold point in its tuning range;

10    and

changing the first output capacitance to a second output capacitance if it is determined that the main loop circuit has reached the threshold point in its tuning range.

7. A method according to Claim 6, further comprising:

15        again determining if the main loop circuit has reached the threshold point in its tuning range; and

changing the second output capacitance to a third output capacitance if it is again determined that the main loop circuit has reached the threshold point in its tuning range.

20        8. A method according to Claim 6, wherein changing the first output capacitance comprises:

transmitting a signal from the main loop circuit to the switch capacitor circuit.

9. An apparatus comprising:

a switch capacitor circuit to generate a first output capacitance based on a control signal;

a main loop circuit to generate an output signal based on the control signal; and

an oscillating circuit to generate an oscillating signal, a frequency of the oscillating signal based at least on the first output capacitance and the output signal.

10. An apparatus according to Claim 9, further comprising:

a charge pump to generate the control signal,

wherein the control signal is based on the frequency of the oscillating signal and on a reference frequency.

11. An apparatus according to Claim 10, further comprising:

a detector to receive a reference signal representing the reference frequency, to receive a first signal having a first frequency, the first frequency based on the frequency of the oscillating signal, to determine a difference between the reference frequency and the first frequency, and to transmit a signal to the charge pump based on the difference.

12. An apparatus according to Claim 11, further comprising:

a first switch to couple the switch capacitor circuit to the control signal and to decouple the switch capacitor circuit from the control signal; and

a second switch to couple the main loop circuit to the control signal and to decouple the main loop circuit from the control signal.

13. An apparatus according to Claim 12,

wherein the first switch is to uncouple the switch capacitor circuit from the control signal if it is determined that an output capacitance of the switch capacitor circuit is oscillating; and

5 wherein the second switch is to couple the main loop circuit to the control signal if it is determined that the output capacitance of the switch capacitor circuit is oscillating.

14. An apparatus according to Claim 9, further comprising:

a first switch to couple the switch capacitor circuit to the control signal and to decouple the switch capacitor circuit from the control signal; and

10 a second switch to couple the main loop circuit to the control signal and to decouple the main loop circuit from the control signal.

15. An apparatus according to Claim 14,

15 wherein the first switch is to uncouple the switch capacitor circuit from the control signal if it is determined that an output capacitance of the switch capacitor circuit is oscillating; and

wherein the second switch is to couple the main loop circuit to the control signal if it is determined that the output capacitance of the switch capacitor circuit is oscillating.

20 16. An apparatus according to Claim 9,

the capacitor switch circuit to change the first output capacitance to a second output capacitance if it is determined that the main loop circuit has reached a threshold point in its tuning range.

25 17. An apparatus according to Claim 16, further comprising:

the capacitor switch circuit to change the second output capacitance to a third output capacitance if it is determined that the main loop circuit has reached the threshold point in its tuning range.

5           18. A system comprising:

a transceiver to transmit and receive data comprising:

a switch capacitor circuit to generate a first output capacitance based on a control signal;

a main loop circuit to generate an output signal based on the control signal;

10           and

an oscillating circuit to generate an oscillating signal, a frequency of the oscillating signal based at least on the first output capacitance and the output signal, the oscillating signal to be used to encode and decode the data;

a processor to process the data; and

15           a double data rate memory in communication with the processor.

19. A system according to Claim 18, further comprising:

a charge pump to generate the control signal;

20           a detector to receive a reference signal representing a reference frequency, to receive a first signal having a first frequency, the first frequency based on the frequency of the oscillating signal, to determine a difference between the reference frequency and the first frequency, and to transmit a signal to the charge pump based on the difference.

20. A system according to Claim 19, further comprising:

25           a first switch to couple the switch capacitor circuit to the control signal and to decouple the switch capacitor circuit from the control signal; and

a second switch to couple the main loop circuit to the control signal and to decouple the main loop circuit from the control signal.

21. A system according to Claim 20,

5 wherein the first switch is to uncouple the switch capacitor circuit from the control signal if it is determined that an output capacitance of the switch capacitor circuit is oscillating; and

wherein the second switch is to couple the main loop circuit to the control signal if it is determined that the output capacitance of the switch capacitor circuit is oscillating.

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22. A system according to Claim 18, further comprising:

a framer coupled to the transceiver and to the processor, the framer to decapsulate data received by the transceiver and to encapsulate data to be transmitted by the transceiver.